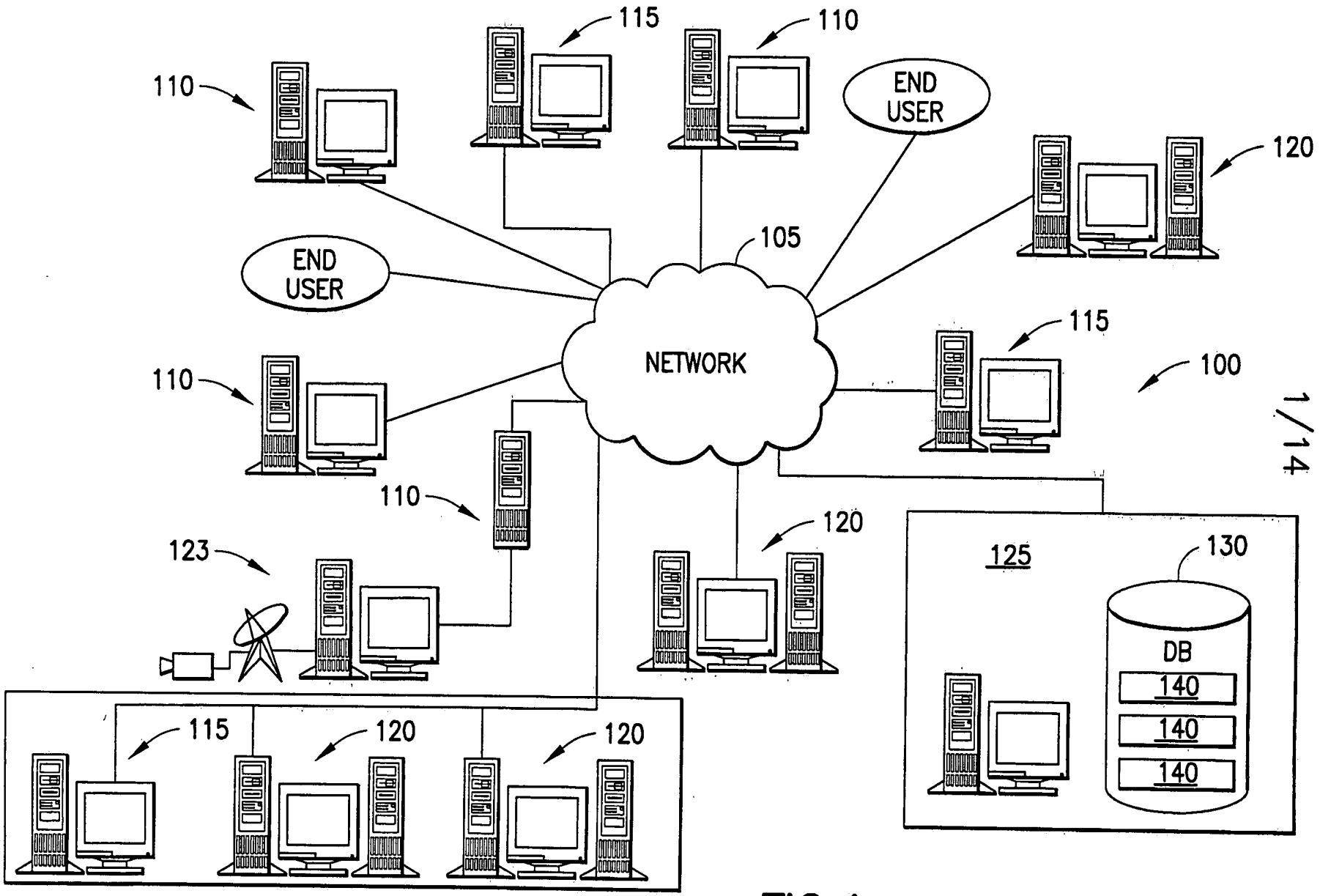
115
110
110
END USER
120
105
END USER
NETWORK
115
100
110
110
123
120
125
130
DB
140
140
140
115
120
120

FIG. 1

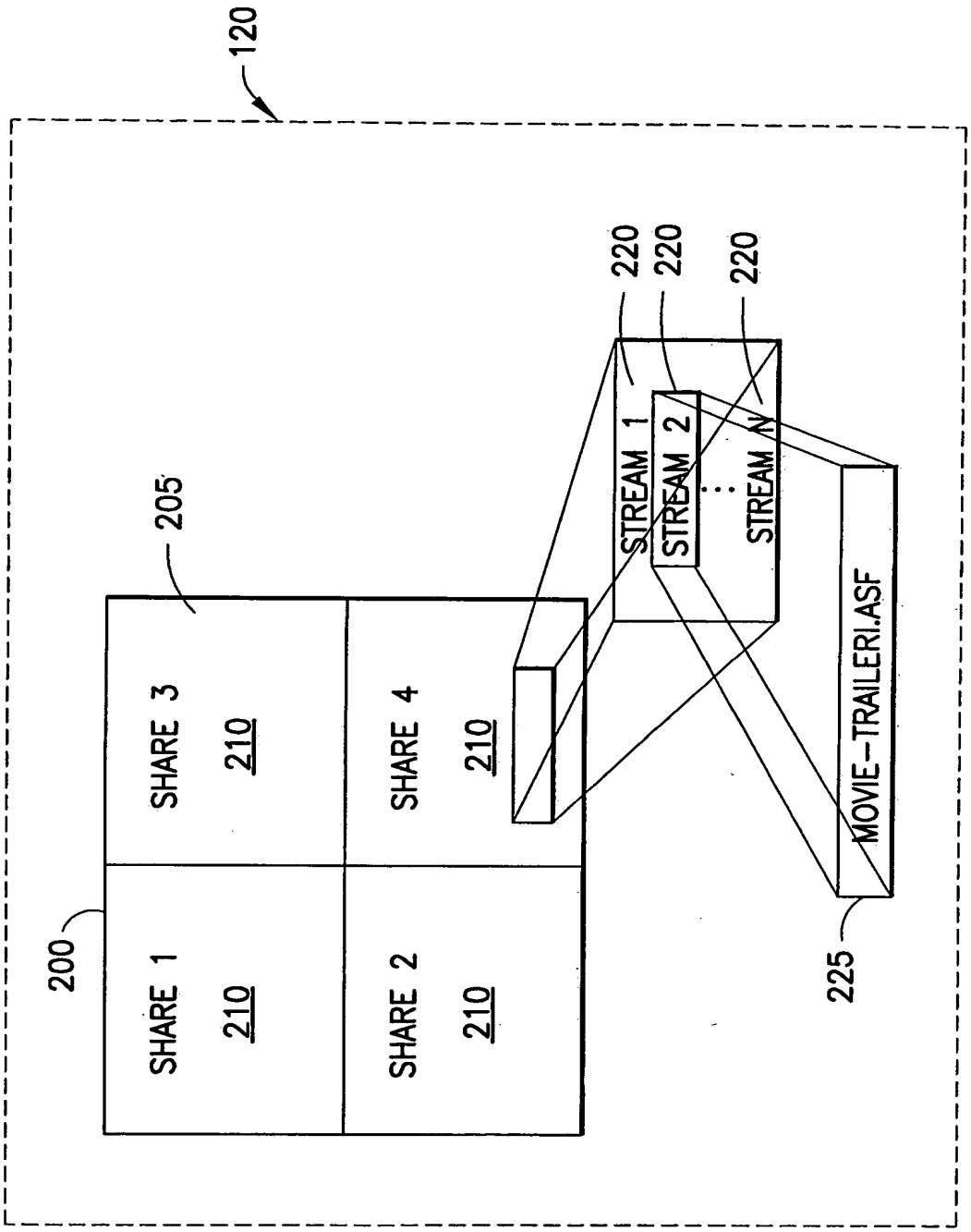
120
205
200
SHARE 1
210
SHARE 2
210
SHARE 3
210
SHARE 4
210
220
220
220
STREAM 1
STREAM 2
STREAM N
MOVIE-TRAILER1.ASF
225

FIG.2

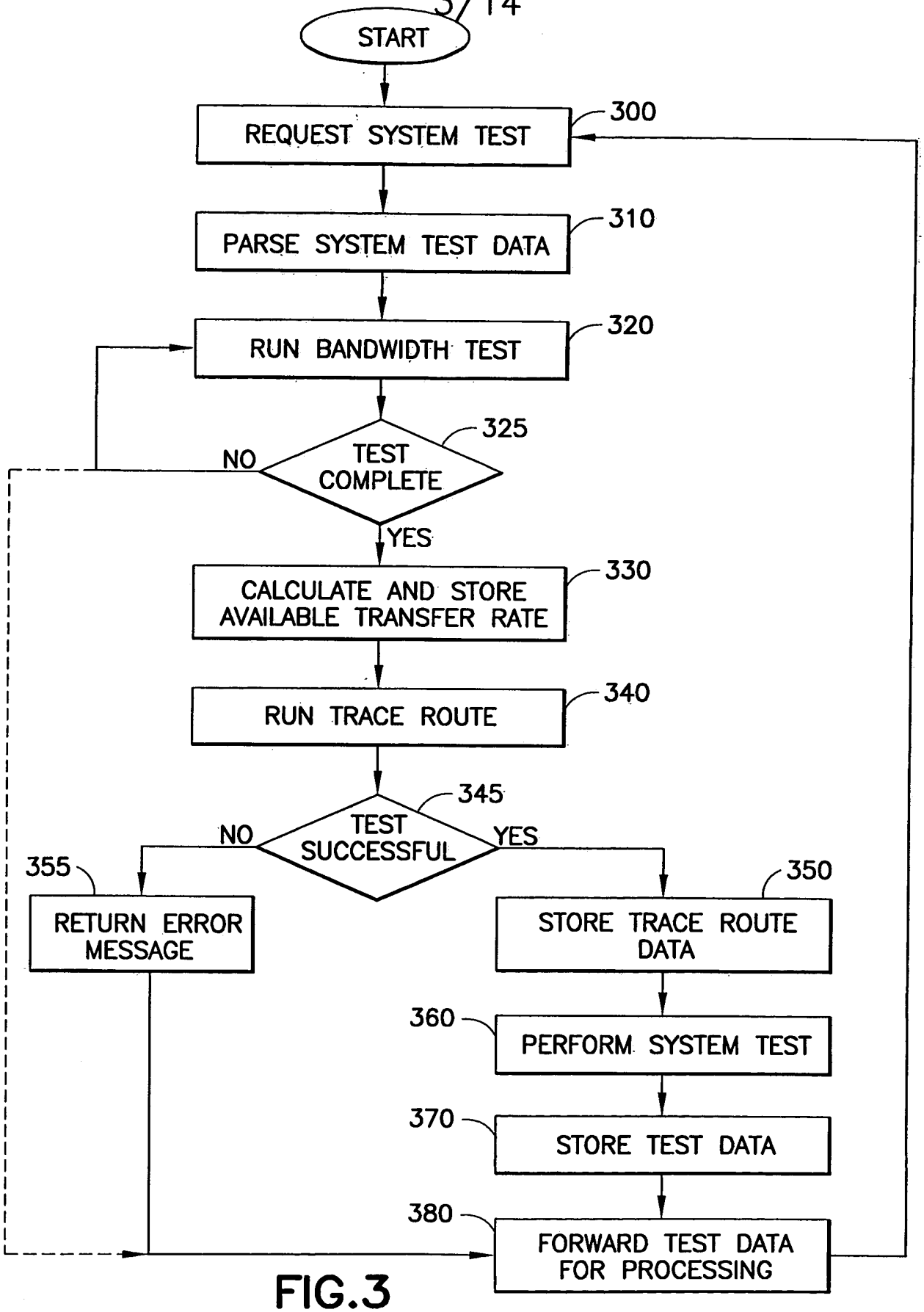
START
REQUEST SYSTEM TEST
300
PARSE SYSTEM TEST DATA
310
RUN BANDWIDTH TEST
320
TEST COMPLETE
325
NO
YES
CALCULATE AND STORE AVAILABLE TRANSFER RATE
330
RUN TRACE ROUTE
340
TEST SUCCESSFUL
345
NO
YES
355
RETURN ERROR MESSAGE
350
STORE TRACE ROUTE DATA
360
PERFORM SYSTEM TEST
370
STORE TEST DATA
380
FORWARD TEST DATA FOR PROCESSING

FIG.3

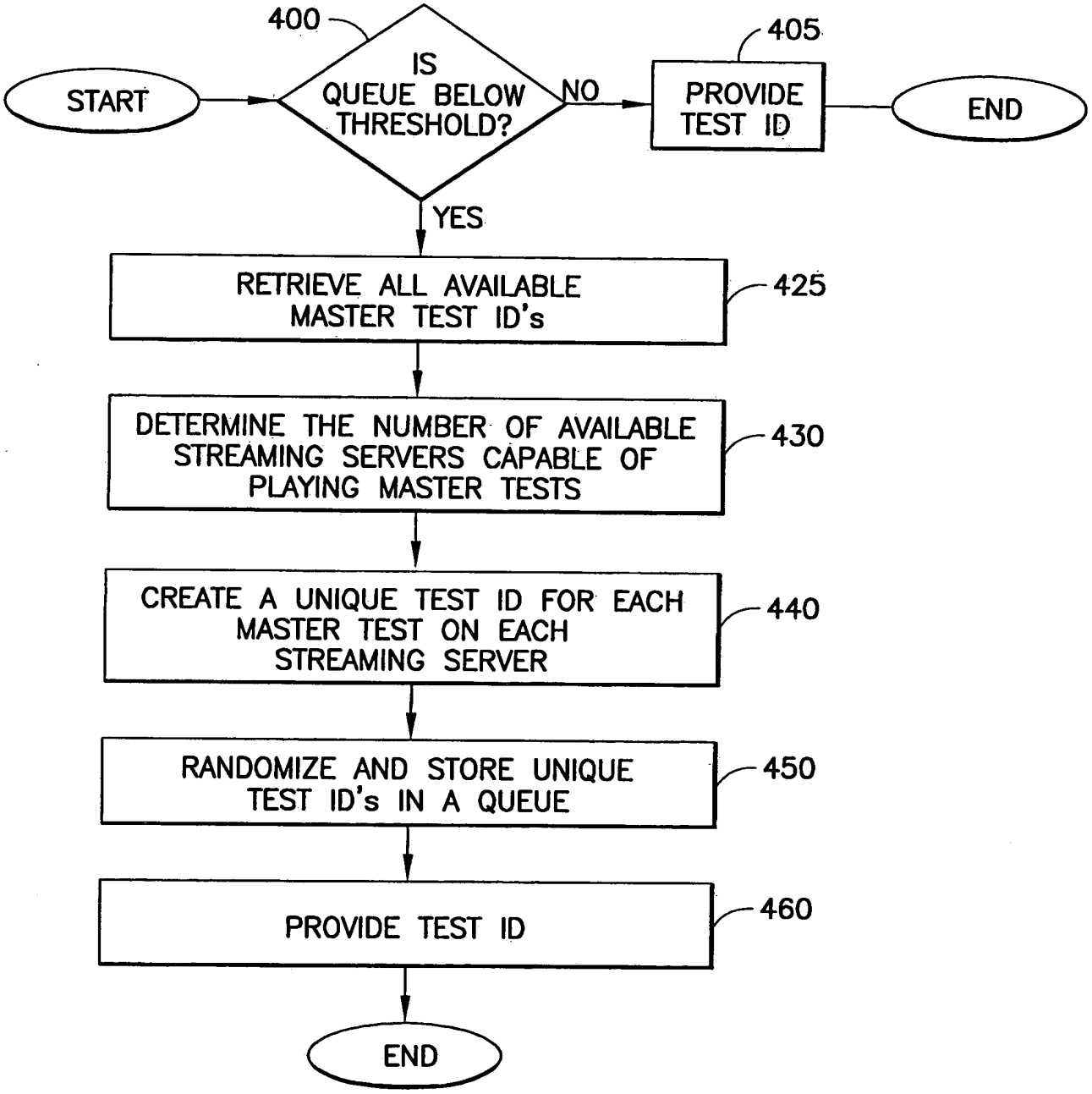
400
IS QUEUE BELOW THRESHOLD?
START
NO
405
PROVIDE TEST ID
END
YES
RETRIEVE ALL AVAILABLE MASTER TEST ID's
425
DETERMINE THE NUMBER OF AVAILABLE STREAMING SERVERS CAPABLE OF PLAYING MASTER TESTS
430
CREATE A UNIQUE TEST ID FOR EACH MASTER TEST ON EACH STREAMING SERVER
440
RANDOMIZE AND STORE UNIQUE TEST ID's IN A QUEUE
450
PROVIDE TEST ID
460
END

FIG.4

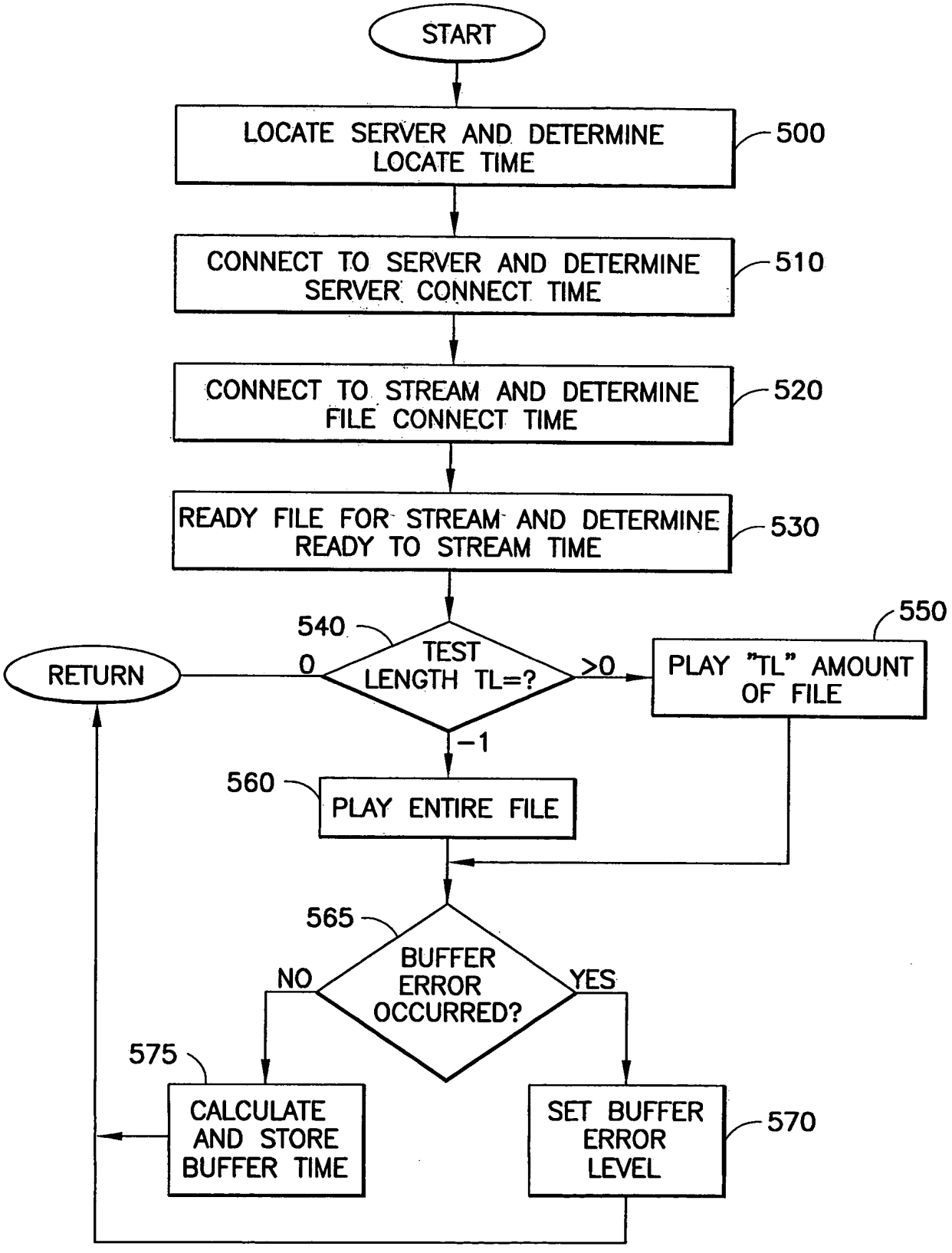
START
LOCATE SERVER AND DETERMINE LOCATE TIME
500
CONNECT TO SERVER AND DETERMINE SERVER CONNECT TIME
510
CONNECT TO STREAM AND DETERMINE FILE CONNECT TIME
520
READY FILE FOR STREAM AND DETERMINE READY TO STREAM TIME
530
540
TEST LENGTH TL=?
0
>0
-1
RETURN
550
PLAY "TL" AMOUNT OF FILE
560
PLAY ENTIRE FILE
565
BUFFER ERROR OCCURRED?
NO
YES
575
CALCULATE AND STORE BUFFER TIME
SET BUFFER ERROR LEVEL
570

FIG.5

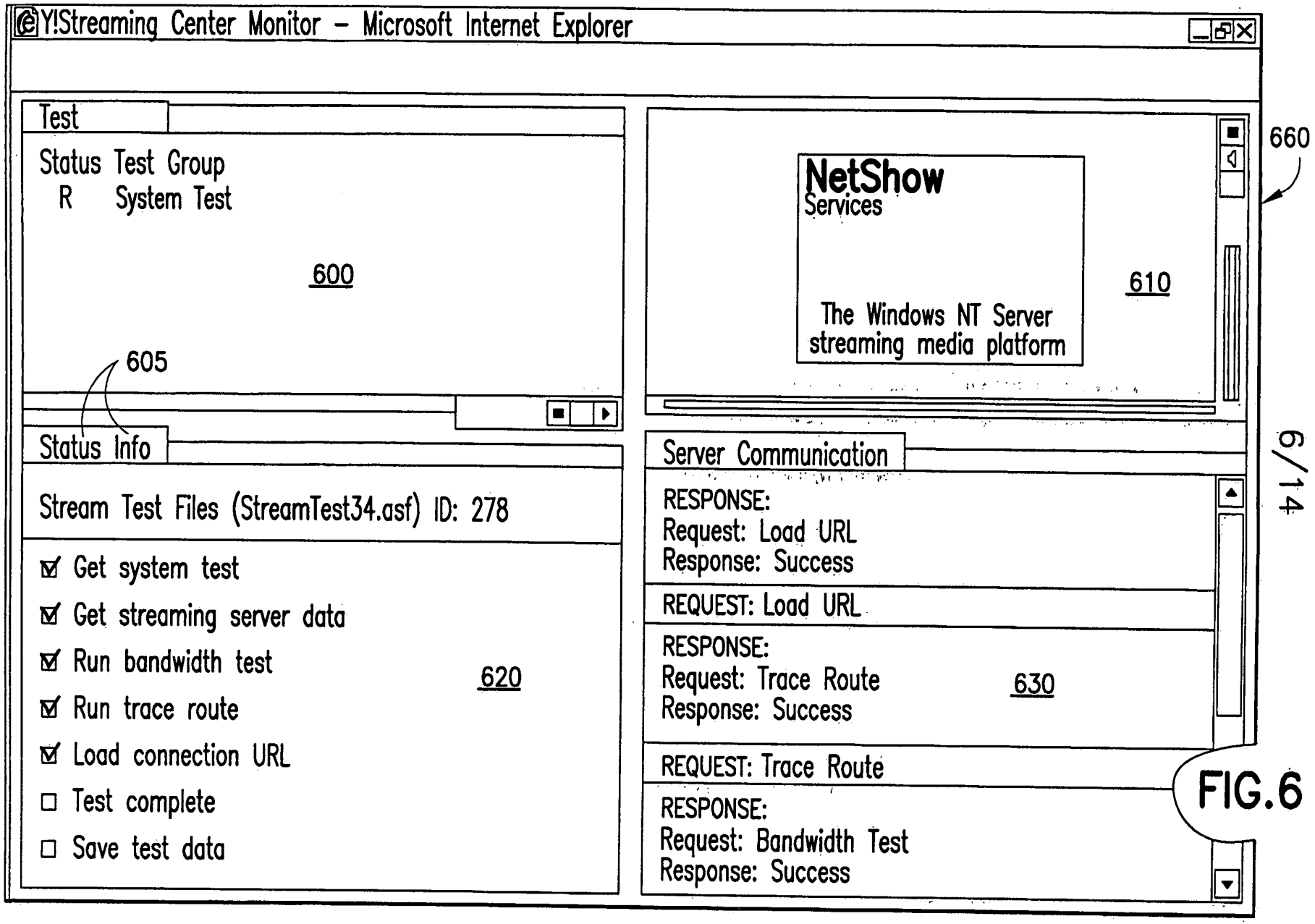
Y!Streaming Center Monitor - Microsoft Internet Explorer
Test
Status Test Group
R System Test
600
605
Status Info
Stream Test Files (StreamTest34.asf) ID: 278
Get system test
Get streaming server data
Run bandwidth test
Run trace route
Load connection URL
Test complete
Save test data
620
NetShow
Services
The Windows NT Server streaming media platform
610
660
Server Communication
RESPONSE:
Request: Load URL
Response: Success
REQUEST: Load URL
RESPONSE:
Request: Trace Route
Response: Success
630
REQUEST: Trace Route
RESPONSE:
Request: Bandwidth Test
Response: Success

FIG.6

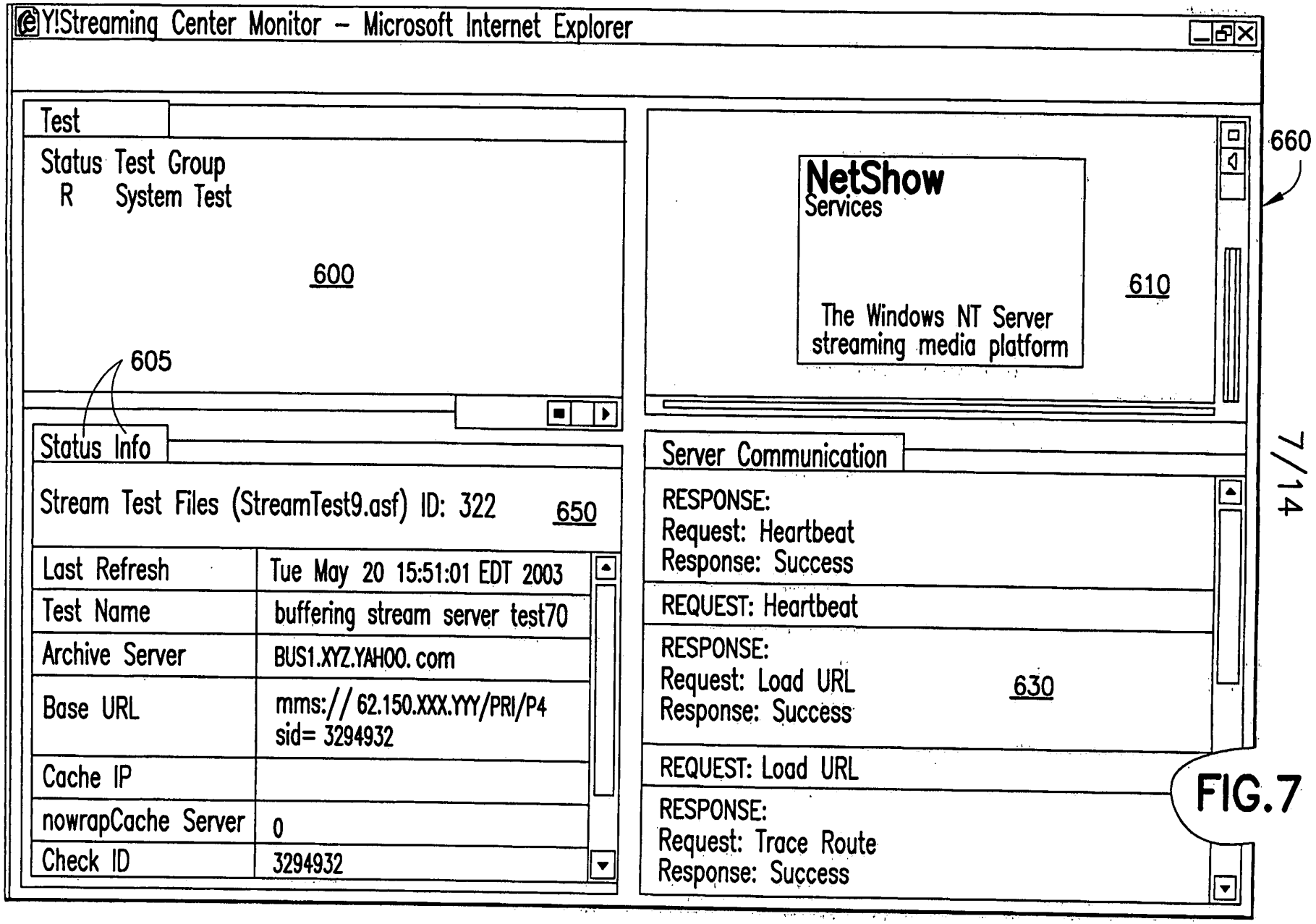
Y!Streaming Center Monitor – Microsoft Internet Explorer
Test
Status Test Group
R System Test
600
605
NetShow
Services
The Windows NT Server
streaming media platform
610
660
Status Info
Stream Test Files (StreamTest9.asf) ID: 322
650
Last Refresh
Tue May 20 15:51:01 EDT 2003
Test Name
buffering stream server test70
Archive Server
BUS1.XYZ.YAHOO.com
Base URL
mms://62.150.XXX.YYY/PRI/P4
sid= 3294932
Cache IP
nowrapCache Server
0
Check ID
3294932
Server Communication
RESPONSE:
Request: Heartbeat
Response: Success
REQUEST: Heartbeat
RESPONSE:
Request: Load URL
Response: Success
630
REQUEST: Load URL
RESPONSE:
Request: Trace Route
Response: Success

FIG.7

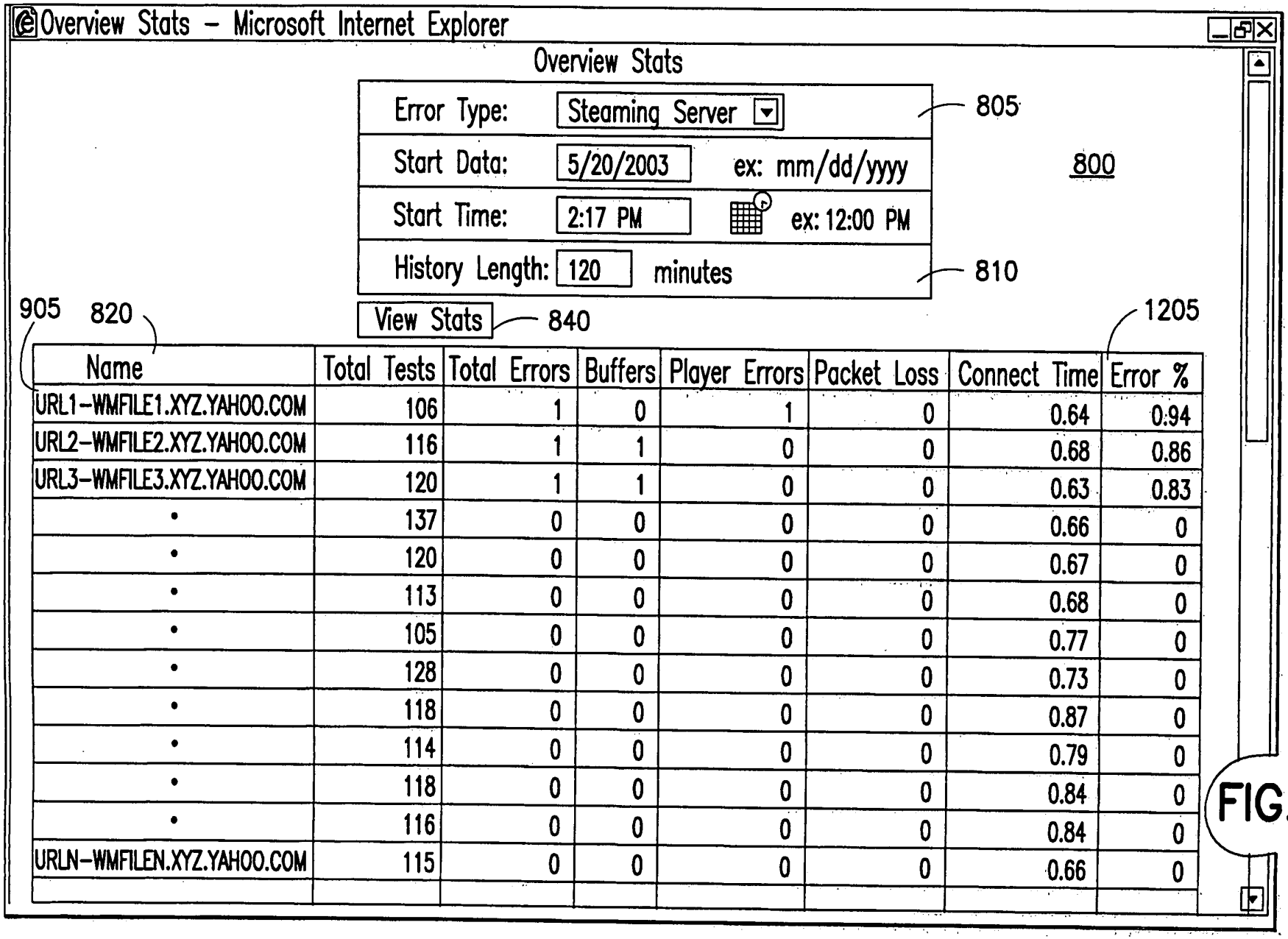
Overview Stats - Microsoft Internet Explorer
Overview Stats
Error Type: Steaming Server
805
Start Data: 5/20/2003 ex: mm/dd/yyyy
800
Start Time: 2:17 PM ex: 12:00 PM
History Length: 120 minutes
810
905
820
View Stats
840
1205
Name | Total Tests | Total Errors | Buffers | Player Errors | Packet Loss | Connect Time | Error %
URL1-WMFILE1.XYZ.YAHOO.COM | 106 | 1 | 0 | 1 | 0 | 0.64 | 0.94
URL2-WMFILE2.XYZ.YAHOO.COM | 116 | 1 | 1 | 0 | 0 | 0.68 | 0.86
URL3-WMFILE3.XYZ.YAHOO.COM | 120 | 1 | 1 | 0 | 0 | 0.63 | 0.83
• | 137 | 0 | 0 | 0 | 0 | 0.66 | 0
• | 120 | 0 | 0 | 0 | 0 | 0.67 | 0
• | 113 | 0 | 0 | 0 | 0 | 0.68 | 0
• | 105 | 0 | 0 | 0 | 0 | 0.77 | 0
• | 128 | 0 | 0 | 0 | 0 | 0.73 | 0
• | 118 | 0 | 0 | 0 | 0 | 0.87 | 0
• | 114 | 0 | 0 | 0 | 0 | 0.79 | 0
• | 118 | 0 | 0 | 0 | 0 | 0.84 | 0
• | 116 | 0 | 0 | 0 | 0 | 0.84 | 0
URLN-WMFILEN.XYZ.YAHOO.COM | 115 | 0 | 0 | 0 | 0 | 0.66 | 0

FIG.8

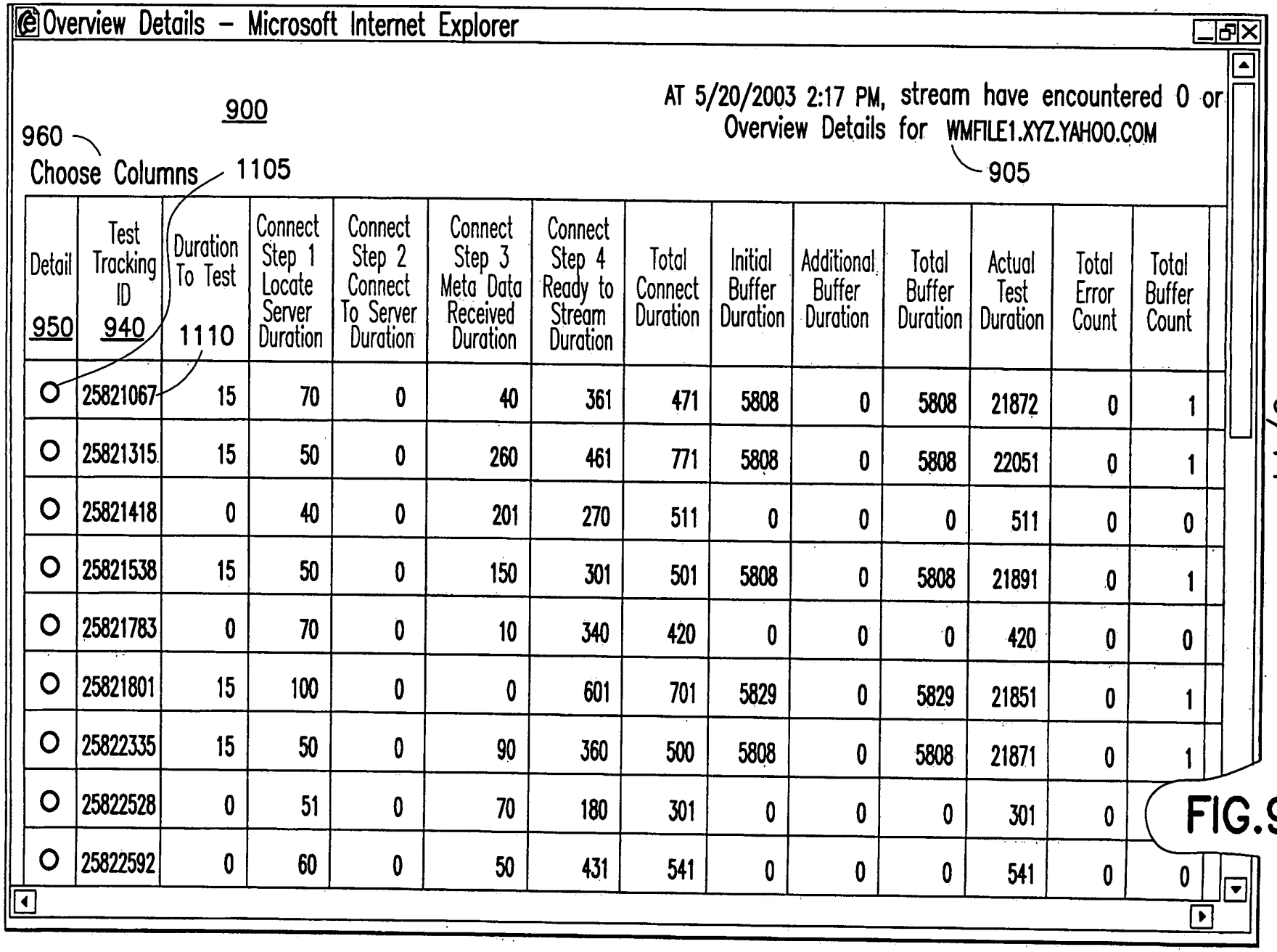
Overview Details - Microsoft Internet Explorer
900
960
Choose Columns
1105
AT 5/20/2003 2:17 PM, stream have encountered 0 or
Overview Details for WMFILE1.XYZ.YAHOO.COM
905
Detail 950
Test Tracking ID 940
Duration To Test 1110
Connect Step 1 Locate Server Duration
Connect Step 2 Connect To Server Duration
Connect Step 3 Meta Data Received Duration
Connect Step 4 Ready to Stream Duration
Total Connect Duration
Initial Buffer Duration
Additional Buffer Duration
Total Buffer Duration
Actual Test Duration
Total Error Count
Total Buffer Count
25821067 15 70 0 40 361 471 5808 0 5808 21872 0 1
25821315 15 50 0 260 461 771 5808 0 5808 22051 0 1
25821418 0 40 0 201 270 511 0 0 0 511 0 0
25821538 15 50 0 150 301 501 5808 0 5808 21891 0 1
25821783 0 70 0 10 340 420 0 0 0 420 0 0
25821801 15 100 0 0 601 701 5829 0 5829 21851 0 1
25822335 15 50 0 90 360 500 5808 0 5808 21871 0 1
25822528 0 51 0 70 180 301 0 0 0 301 0 0
25822592 0 60 0 50 431 541 0 0 0 541 0 0

FIG.9

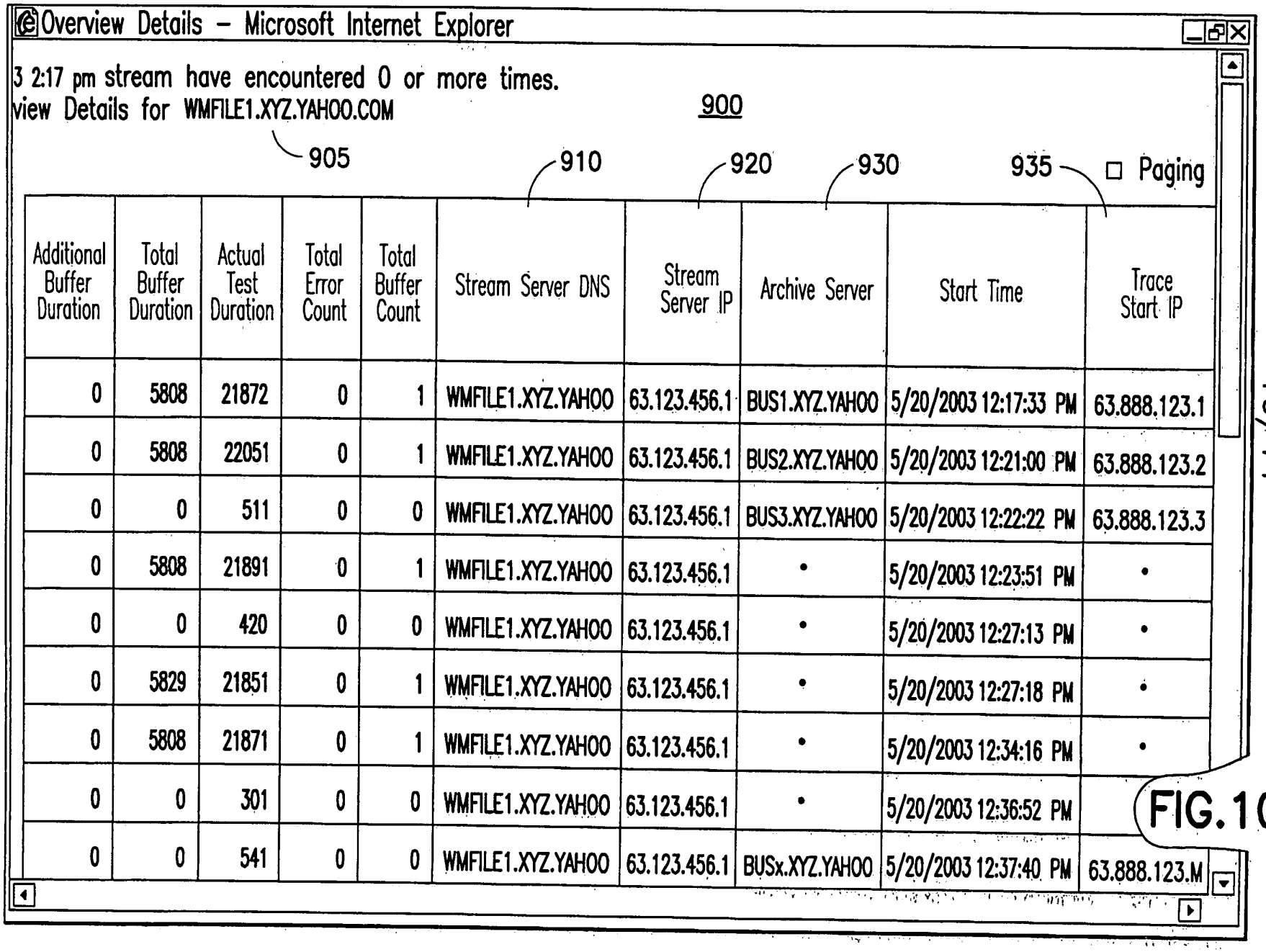
Overview Details – Microsoft Internet Explorer
3 2:17 pm stream have encountered 0 or more times.
view Details for WMFILE1.XYZ.YAHOO.COM
900
905
910
920
930
935
Paging
Additional Buffer Duration
Total Buffer Duration
Actual Test Duration
Total Error Count
Total Buffer Count
Stream Server DNS
Stream Server IP
Archive Server
Start Time
Trace Start IP
0 5808 21872 0 1 WMFILE1.XYZ.YAHOO 63.123.456.1 BUS1.XYZ.YAHOO 5/20/2003 12:17:33 PM 63.888.123.1
0 5808 22051 0 1 WMFILE1.XYZ.YAHOO 63.123.456.1 BUS2.XYZ.YAHOO 5/20/2003 12:21:00 PM 63.888.123.2
0 0 511 0 0 WMFILE1.XYZ.YAHOO 63.123.456.1 BUS3.XYZ.YAHOO 5/20/2003 12:22:22 PM 63.888.123.3
0 5808 21891 0 1 WMFILE1.XYZ.YAHOO 63.123.456.1 • 5/20/2003 12:23:51 PM •
0 0 420 0 0 WMFILE1.XYZ.YAHOO 63.123.456.1 • 5/20/2003 12:27:13 PM •
0 5829 21851 0 1 WMFILE1.XYZ.YAHOO 63.123.456.1 • 5/20/2003 12:27:18 PM •
0 5808 21871 0 1 WMFILE1.XYZ.YAHOO 63.123.456.1 • 5/20/2003 12:34:16 PM •
0 0 301 0 0 WMFILE1.XYZ.YAHOO 63.123.456.1 • 5/20/2003 12:36:52 PM
0 0 541 0 0 WMFILE1.XYZ.YAHOO 63.123.456.1 BUSx.XYZ.YAHOO 5/20/2003 12:37:40 PM 63.888.123.M

FIG.10

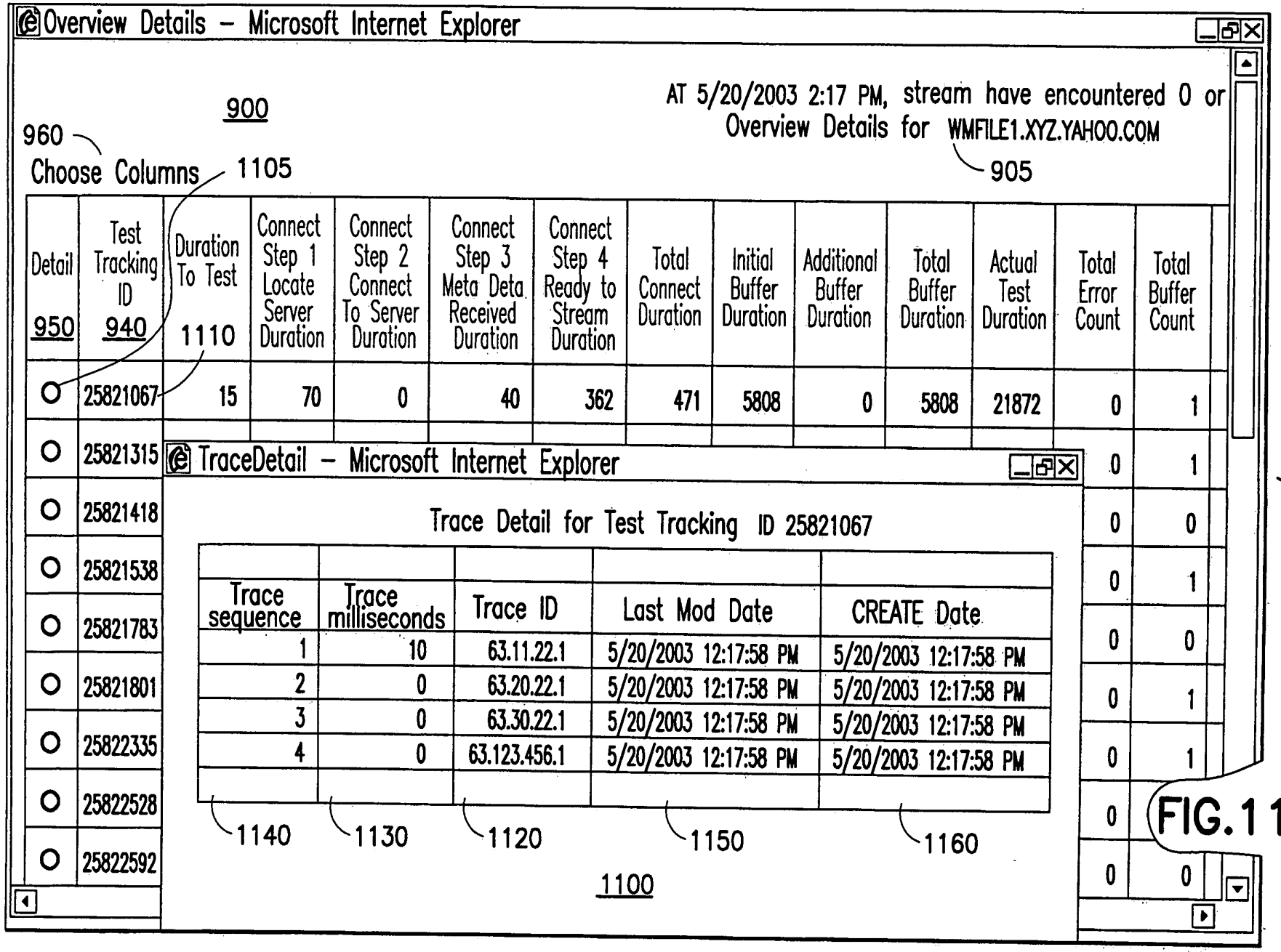
Overview Details – Microsoft Internet Explorer
900
AT 5/20/2003 2:17 PM, stream have encountered 0 or
Overview Details for WMFILE1.XYZ.YAHOO.COM
905
960
Choose Columns
1105
Detail 950
Test Tracking ID 940
Duration To Test 1110
Connect Step 1 Locate Server Duration
Connect Step 2 Connect To Server Duration
Connect Step 3 Meta Deta Received Duration
Connect Step 4 Ready to Stream Duration
Total Connect Duration
Initial Buffer Duration
Additional Buffer Duration
Total Buffer Duration
Actual Test Duration
Total Error Count
Total Buffer Count
25821067 15 70 0 40 362 471 5808 0 5808 21872 0 1
25821315 0 1
25821418 0 0
25821538 0 1
25821783 0 0
25821801 0 1
25822335 0 1
25822528 0
25822592 0 0
TraceDetail – Microsoft Internet Explorer
Trace Detail for Test Tracking ID 25821067
Trace sequence
Trace milliseconds
Trace ID
Last Mod Date
CREATE Date
1 10 63.11.22.1 5/20/2003 12:17:58 PM 5/20/2003 12:17:58 PM
2 0 63.20.22.1 5/20/2003 12:17:58 PM 5/20/2003 12:17:58 PM
3 0 63.30.22.1 5/20/2003 12:17:58 PM 5/20/2003 12:17:58 PM
4 0 63.123.456.1 5/20/2003 12:17:58 PM 5/20/2003 12:17:58 PM
1140
1130
1120
1150
1160
1100

FIG.11

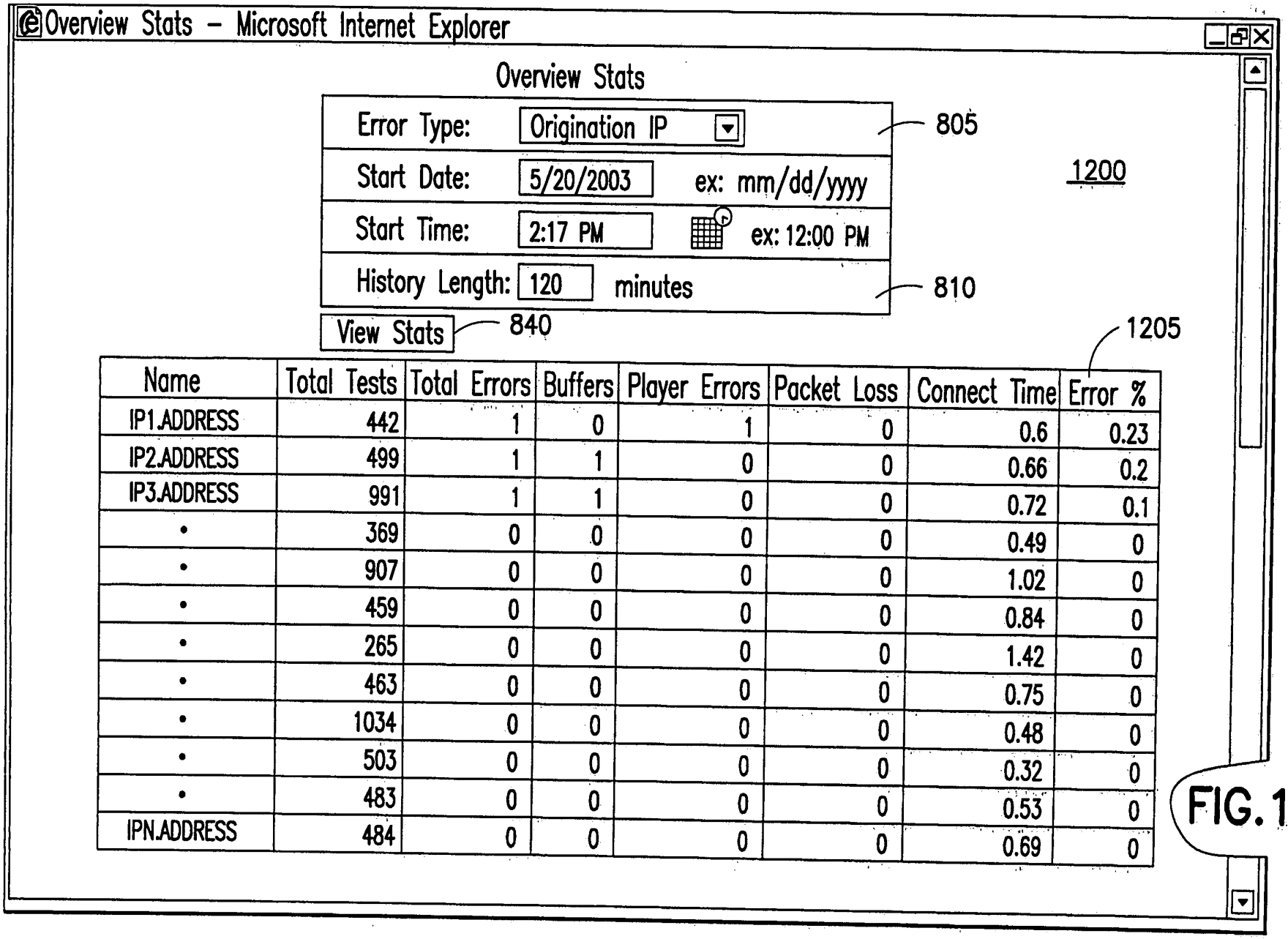
Overview Stats - Microsoft Internet Explorer
Overview Stats
Error Type: Origination IP
805
Start Date: 5/20/2003 ex: mm/dd/yyyy
1200
Start Time: 2:17 PM ex: 12:00 PM
History Length: 120 minutes
810
View Stats
840
1205
Name | Total Tests | Total Errors | Buffers | Player Errors | Packet Loss | Connect Time | Error %
IP1.ADDRESS | 442 | 1 | 0 | 1 | 0 | 0.6 | 0.23
IP2.ADDRESS | 499 | 1 | 1 | 0 | 0 | 0.66 | 0.2
IP3.ADDRESS | 991 | 1 | 1 | 0 | 0 | 0.72 | 0.1
• | 369 | 0 | 0 | 0 | 0 | 0.49 | 0
• | 907 | 0 | 0 | 0 | 0 | 1.02 | 0
• | 459 | 0 | 0 | 0 | 0 | 0.84 | 0
• | 265 | 0 | 0 | 0 | 0 | 1.42 | 0
• | 463 | 0 | 0 | 0 | 0 | 0.75 | 0
• | 1034 | 0 | 0 | 0 | 0 | 0.48 | 0
• | 503 | 0 | 0 | 0 | 0 | 0.32 | 0
• | 483 | 0 | 0 | 0 | 0 | 0.53 | 0
IPN.ADDRESS | 484 | 0 | 0 | 0 | 0 | 0.69 | 0

FIG. 12

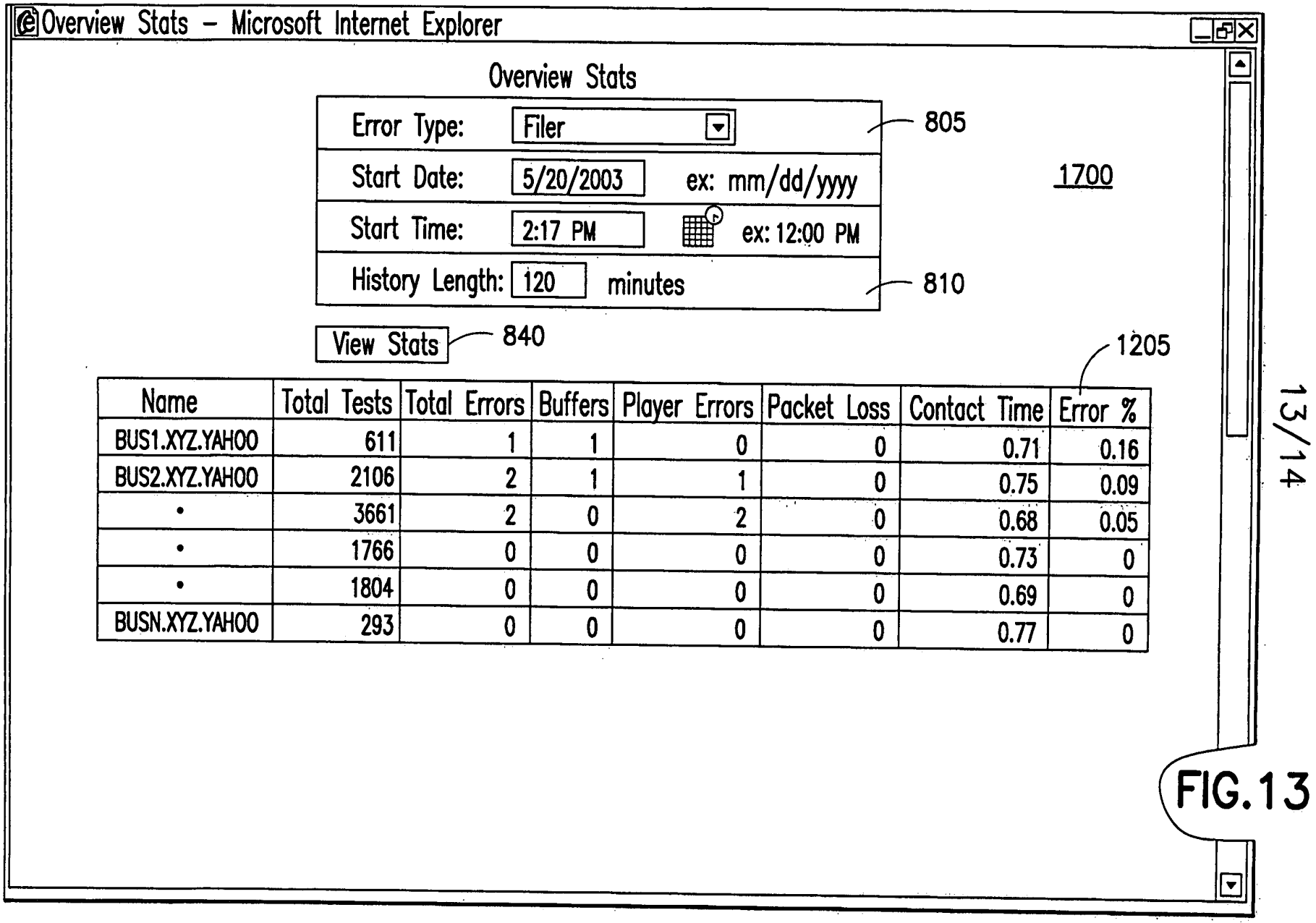
Overview Stats – Microsoft Internet Explorer
Overview Stats
Error Type: Filer
805
Start Date: 5/20/2003 ex: mm/dd/yyyy
1700
Start Time: 2:17 PM ex: 12:00 PM
History Length: 120 minutes
810
View Stats
840
1205
Name | Total Tests | Total Errors | Buffers | Player Errors | Packet Loss | Contact Time | Error %
BUS1.XYZ.YAHOO | 611 | 1 | 1 | 0 | 0 | 0.71 | 0.16
BUS2.XYZ.YAHOO | 2106 | 2 | 1 | 1 | 0 | 0.75 | 0.09
• | 3661 | 2 | 0 | 2 | 0 | 0.68 | 0.05
• | 1766 | 0 | 0 | 0 | 0 | 0.73 | 0
• | 1804 | 0 | 0 | 0 | 0 | 0.69 | 0
BUSN.XYZ.YAHOO | 293 | 0 | 0 | 0 | 0 | 0.77 | 0

FIG.13

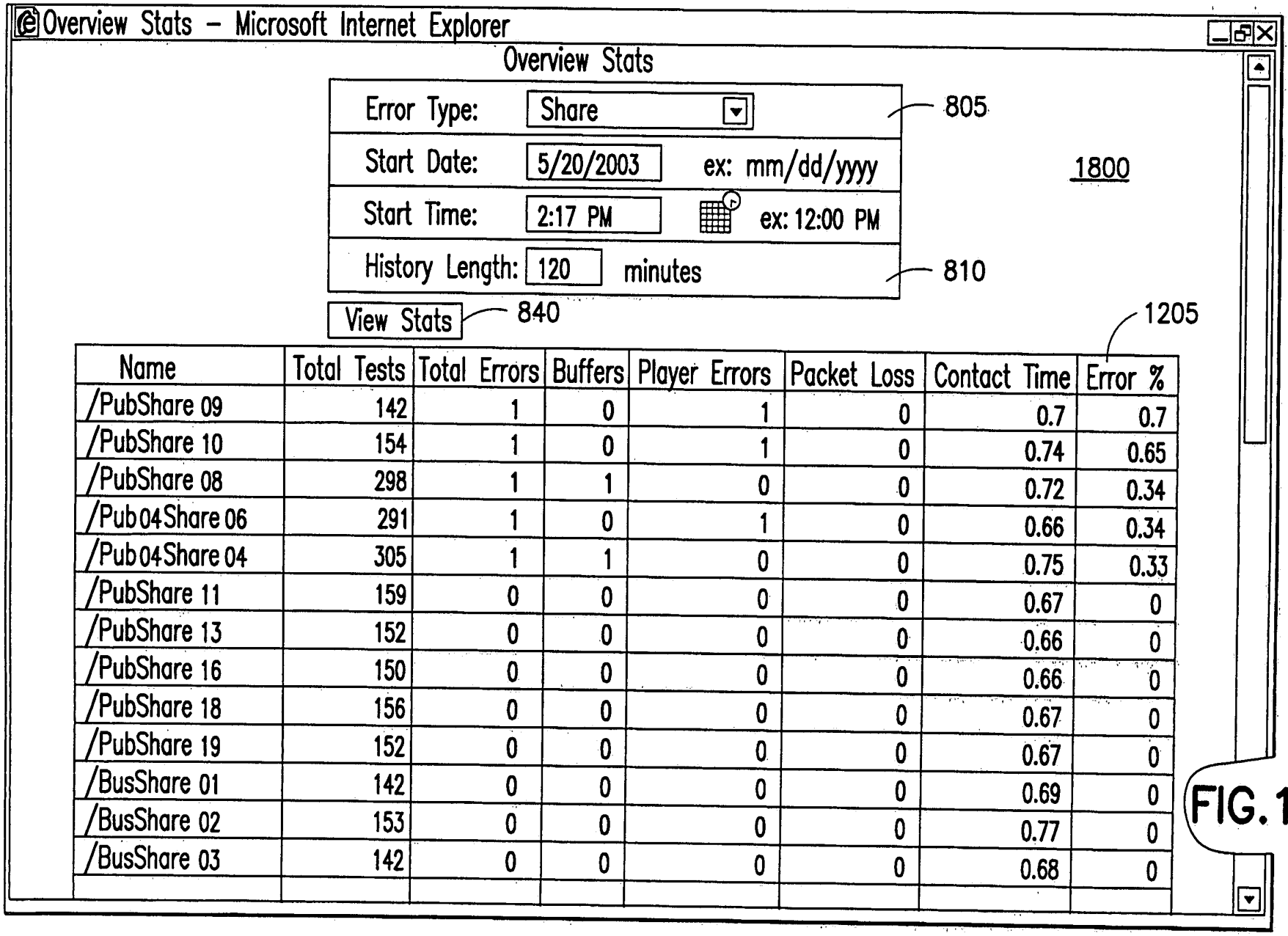
Overview Stats – Microsoft Internet Explorer
Overview Stats
Error Type: Share
805
Start Date: 5/20/2003 ex: mm/dd/yyyy
1800
Start Time: 2:17 PM ex: 12:00 PM
History Length: 120 minutes
810
View Stats
840
1205
Name | Total Tests | Total Errors | Buffers | Player Errors | Packet Loss | Contact Time | Error %
/PubShare 09 | 142 | 1 | 0 | 1 | 0 | 0.7 | 0.7
/PubShare 10 | 154 | 1 | 0 | 1 | 0 | 0.74 | 0.65
/PubShare 08 | 298 | 1 | 1 | 0 | 0 | 0.72 | 0.34
/Pub04Share 06 | 291 | 1 | 0 | 1 | 0 | 0.66 | 0.34
/Pub04Share 04 | 305 | 1 | 1 | 0 | 0 | 0.75 | 0.33
/PubShare 11 | 159 | 0 | 0 | 0 | 0 | 0.67 | 0
/PubShare 13 | 152 | 0 | 0 | 0 | 0 | 0.66 | 0
/PubShare 16 | 150 | 0 | 0 | 0 | 0 | 0.66 | 0
/PubShare 18 | 156 | 0 | 0 | 0 | 0 | 0.67 | 0
/PubShare 19 | 152 | 0 | 0 | 0 | 0 | 0.67 | 0
/BusShare 01 | 142 | 0 | 0 | 0 | 0 | 0.69 | 0
/BusShare 02 | 153 | 0 | 0 | 0 | 0 | 0.77 | 0
/BusShare 03 | 142 | 0 | 0 | 0 | 0 | 0.68 | 0

FIG. 14